There was no toxicity grade 4. The cosmetic outcome was excellent in 56% of patients and good in 22%. At the end of the study, locorregional relapse occurred in 6 patients, 94.4% were alive without disease, 5% were alive with disease and 0.6% died from tumor.
Conclusion. Concomitant boost is feasible and safe for patients with breast cancer underwent to conservative treatment.

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Dosimetric comparison between IMRT vs 3D-EBRT in bilateral breast cancer

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Bilateral breast cancer is rare but increasing because of better diagnosis. Treatment with radiotherapy is difficult because match-line overlap must be avoided and Organ at risk (OAR) spared. This study evaluated dose distribution, homogeneity and dose to OAR in women with advanced bilateral breast carcinoma undergoing radiotherapy to breast and regional nodal using standard 3D external beam radiotherapy (3DEBRT) versus IMRT after breast conserving surgery and chemotherapy. Volumes were delineated on 6 patients. The 3DEBRT technique involved bilateral tangential fields for breast and two oblique, one anterior and one posterior, to the supraclavicular fossa. IMRT technique involved several multifield coplanar inverse planning. The prescription dose was 50 Gy in 25 fractions. Dose-volume histograms, dose homogeneity and dose to OAR were evaluated. IMRT results were superior to 3D-EBRT with significant improvements in achieving lower mean lungs dose and reducing the volume of heart in the medium-high dose region V30. PTV coverages were always equal to or greater in IMRT than 3D-EBRT technique. IMRT is ideal for treating complex treatment volumes in bilateral breast cancer, improving dose homogeneity and coverage. Moreover reduces normal tissue complications through organ at risk sparing.

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Dosimetric comparison of three-dimensional conformal radiotherapy (3D-CRT) versus two IMRT techniques in breast cancer

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Introduction. Dosimetric studies have established intensity-modulated radiotherapy (IMRT) as superior to 3D-CRT in terms of target coverage, conformity, and sparing of normal tissues and equivalent for survival outcomes. However, concern has been raised regarding its hypothetical higher integral dose to normal tissues and the potential carcinogenic risk. We compare three different radiotherapy modalities for real clinical situations.
Material and methods. 10 patients with early breast cancer treated with conservative surgery were referred to receive radiotherapy to our clinic. After individualized evaluation in a clinical meeting, all patients were proposed to undergo IMRT treatment (step and shoot). Every patient was re-planned with 3D-CRT and Volumetric Modulated Arc Therapy (VMAT).
Objectives. Compare the dosimetric results by 3D-CRT, IMRT step and shoot and VMAT.
Results. We analyzed dosimetric results created by the three plans. The data provided by Dose-volume histogram analysis showed each patient dose constraints for organ at risk and PTV coverage.
Conclusions. IMRT techniques show to be superior to 3D-CRT not only in terms of coverage and homogeneity, but also decreasing integral dose according to our dosimetric data.

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Dosimetric evaluation of 3-D conformal radiotherapy and intensity-modulated radiotherapy for left breast cancer after conservative surgery

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Background. Breast cancers are more frequently diagnosed at an early stage and have improved long term outcomes. Late normal tissue complications induced by adjuvant radiotherapy must be avoided. New breast radiotherapy techniques have been developed. Aim of study was to compare dosimetric parameters of the planning target volume (PTV), organs at risk (OARs) between conformal radiation therapy (3DCRT) and intensity-modulated radiation therapy (IMRT) after breast-conserving surgery.
Methods. 20 patients were studied who had early stage left breast cancer, received adjuvant radiotherapy after conservative surgery, CT-scan was used, 10 patients treated by 3D-CRT and 10 by IMRT, dose was 50 Gy in 25 sessions. Plans were compared